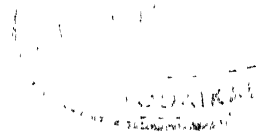

INDIA METEOROLOGICAL DEPARTMENT

HANDBOOK OF CODES

1931

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CONTENTS.

HANDBOOK OF WEATHER CODES IN USE IN INDIA.

I.—SYMBOLIC FORM OF CODES.

The following codes are in use in the India Meteorological Department :—

1. 1931 Indian Weather Code, for use by 1st, 2nd and 3rd class observatories when reporting to forecasting centres.

(*a*) Inland stations—

w	w	V	C_L	N_L	c	d_L	d_c	t	X_1
D	D	F	W	N	R	R	R	E_1	X_2
B	B	B	T	T	U	U	T_S	T_S	X_3
†f_1	B_1	B_1	T_1	T_1	M	M	m	m	X_4
Y_1	Y_2	Y_3	Y_4	Y_5	Y_6	Y_7	Y_8	Y_9	Y_{10}

† *This fourth line is omitted in afternoon and special observations.*

(*b*) Coast stations :—

w	w	V	C_L	N_L	c	d_L	d_c	t	X_1
D	D	F	W	N	R	R	R	E_1	X_2
B	B	B	T	T	U	U	K	S	X_3
†f_1	B_1	B_1	T_1	T_1	M	M	m	m	X_4
Y_1	Y_2	Y_3	Y_4	Y_5	Y_6	Y_7	Y_8	Y_9	Y_{10}

† *This fourth line is replaced by* b b b b_3 b_3 f′ r q d X_4 *in afternoon and special observations.*

For both Inland and Coast stations the time for the morning observations is 8 hours local time and that for the afternoon observations 17 hours Indian Standard Time (Railway Time).

2. 1931 Karachi Weather Code, for use by Arabian, Persian and Mekran observatories, when reporting to Karachi.

$$\frac{\text{mm}}{\text{MM}}\,d_K t U \quad \text{ww} V C_K N_K \quad \text{DDFWN} \quad \text{BBBTT} \quad \text{RRS} V_S \text{X}$$

The morning observations are taken at 4 G. M. T. and the afternoon observations at 14 G. M. T. **mm** and **MM** are reported in the 4 and 14 G. M. T. observations respectively.

3. 1931 Brief Weather Code, for use by 5th class and non-instrumental observatories along air routes.

w	w	V	C_L	N_L
D	D	F	W	N
c	d_L	d_c	t	E_1
†R	R	R	K	S
Y_1	Y_2	Y_3	Y_4	Y_5
X_1	X_2	X_3	X_4	X_5

Inland stations and non-instrumental stations will give a dash, **(—),** *or dashes in place of* **K, S** *and* **R R R** *respectively.*

4. Composite Code in use for exchange of information between forecasting centres.

$\mathbf{IIIB_1\,B_1}$ $\mathbf{wwVC_L\,N_L}$ **DDFWN** **BBTTU** $\mathbf{Rtd_L\,SX}$

5. Pilot balloon code for use by pilot balloon observatories, when reporting to forecasting centres

s	s	h_L	V	X
d	d	v	v	X
.	.	.	.	.
.	.	.	.	.
d	d	v	v	X
*8	d_L	C_L	N_L	X
*9	d_H	c_m	d_m	X
T	H	l	l	X
Y	Y	Y	Y	Z

The heights at which winds are reported and the order in which they are reported, beginning with the 2nd row of the code are :—

0·5, 1·0, 1·5, 2·0, 2·5, 3·0, 4·0 and 6·0 Km. above sea-level.

If a station is above any of these levels the winds at all the aforesaid levels above the level of the station are reported. Thus if a station is 0·92 Km. above sea-level, the winds are reported at 1·0, 1·5, 2·0, etc. Km. above sea-level.

6. Indian broadcast code.

(*a*) Surface observations.

IIIU $\mathbf{wwVC_L\,N_L}$ **DDFWN** **BBBTT** **RRjjX**

(*b*) Upper air reports—

" Pilot " and Name of station followed by

s	s	h_L	V	X
h_i	h_i	h_f	h_f	X
d	d	v	v	X
.	.	.	.	.
.	.	.	.	.
d	d	v	v	X
*8	d_L	C_L	N_L	X

At present Karachi broadcasts everyday Meteorological data of some stations west of Karachi at 0700 (on wave 21·8 meters) and 1700 (on wave 43·6 meters) hrs. G. M. T. containing surface data of 0400 and 1400 G. M. T. observations respectively; the 0700 hrs. broadcast also contains morning upper air reports of a few selected stations. The call sign is VWK.

7. Aviation weather code, for use when broadcasting surface landing conditions to pilots.

Name of station and time of observation followed by

w w V $\mathbf{C_L}$ $\mathbf{N_L}$ **D D F W N**

Whenever necessary the upper air reports are also broadcast for the use of pilots in the form 6 (b).

8. Indian ships' code, (to come into force from 1st January 1932) for use by ships trading only in Indian seas.

PQ'LLL IIIGG DDFww BBVAW SKdCN

9. International ships' code.

(i) **PQLLL IIIGG DDFww BBVTT** $3C_LC_MC_HN$ t_d **KdWN**$_L$ d_s **fabb.**

(ii) **PQLLL IIIGG DDFww BBVTT 6KdCN** $t_d d_s$ **AWC**$_H$

II.—MEANINGS OF THE SYMBOLS.

A=Amount and characteristic of barometric tendency expressed by a single figure. (*See Code I.*)

a=Characteristic of barometric tendency during the period of three hours preceding the time of observation. (*See Code II.*)

BBB=Barometer reading in inches and first two places of decimal (initial 2 or 3 being omitted) corrected for index error and temperature, and reduced to standard gravity and sea-level in case of those stations whose height is less than 3200 feet. For stations above 3200 feet it stands for the barometer corrected for index error, temperature and gravity, and reduced to 3280 feet (1 Kilometer). 6560 feet (2 Kilometers) or 9840 feet (3 Kilometers) whichever of these is nearest to the height of the station. In the Indian broadcast code **BBB** will be reported in millibars and tenths, initial 7, 8, 9 or 10 being omitted.

BB=Barometer reading in inches, only first two places of decimal being reported (omitting all integral figures). The values refer to sea-level and include all corrections for index error, temperature and gravity in case of stations whose height is less than 3200 feet. For stations above 3200 feet, the values refer to nearest 3280 feet (1 Kilometer), 6560 feet (2 Kilometers) or 9840 feet (3 Kilometers) as the case may be and include all corrections for index error, temperature and gravity. In the International ships' code **BB** will be reported in whole millibars or millimeters, initial 9, 10 or 7 being omitted.

B_1B_1=Barometer reading in inches corrected for index error and temperature, only first two places of decimal being reported (omitting all integral figures).

bbb=Barograph reading in inches and first two places of decimal (initial 2 or 3 being omitted).

bb=Amount of barometric tendency during the three hours preceding the time of observations. (*See Code III.*)

b_3b_3=Barograph reading three hours previous to the time of observation in inches, only first two decimal places being reported (omitting all integral figures).

C=Form of predominating cloud. (*See Code IV.*)

C_H=Form of predominating high cloud. (*See Code V.*)

C_K=Form of lowest cloud present. (*See Code VI.*)

C_L =Form of predominating low cloud. (*See Code VII.*)

C_M=Form of predominating medium cloud. (*See Code VIII.*)

C =Form of predominating high or medium cloud. (*See Code IX.*)

c_m=Form of medium cloud. (*See Code X.*)

DD=Direction of ground wind on the scale (01-32) in which 08=East, 16=South, etc., 00=Calm. 33 and 67 are added to the wind direction to indicate unusual gustiness and squall or line squal respectively experienced within one hour of the time of observation.

dd=Direction of wind in upper air on scale (01-36), *i.e.*, degrees from North divided by 10 and rounded off to the nearest whole number (00=calm).

d=Direction of swell. (*See Code XI.*)

d_H=Direction from which high cloud of kind C_H is moving towards station. (*See Code XII.*)

d_K=Direction from which low cloud of kind 'C_K' is moving towards station. (*See Code XII.*)

d_L=Direction from which low cloud of kind 'C_L' is moving towards station. (*See Code XII.*)

d_c =Direction from which high or medium cloud of kind 'c' is moving towards station. (*See Code XII.*)

d_m=Direction from which medium cloud of kind 'c_m' is moving towards station. (*See Code XII.*)

d_s =Direction of movement of ship on scale (1-8), in which 2=Eastwards, 4=Southwards, etc.

E_1=State of ground. (*See Code XIII.*)

F =Force of wind on the Beaufort Scale. (*See Code XIV.*)

f =Speed of ship. (*See Code XV.*)

f_1=Average wind speed during past 24 hours. (*See Code XVI.*)

f'=Average wind speed since last observation. (*See Code XVI.*)

GG=Greenwich time of observation (01=1 a. m., 12=noon, 13=1 p m., 24=midnight).

H=Height of fall of temperature indicator (*See Code XVII.*)

h_L=Height of base of low cloud. (*See Code XVIII.*)

h_fh_f=Final height reported. (*See Code XIX.*)

h_ih_i=Initial height reported. (*See Code XIX.*)

III=Index number of station. (*See Appendix.*)

jj=Meaning varies according to time of observation and between inland and coast stations as follows :—

	Inland stations.	Coast stations.
At 4 G. M. T.	.. m m	$S V_s$
At 14 G. M. T.	.. M M	$S V_s$

K=The state of swell. (*See Code XX.*)

LLL=Latitude in degrees (two figures) and tenths, the tenths being obtained by dividing the number of minutes by 6 and neglecting the remainder.

lll=Longitude in degrees (two figures) and tenths, the tenths being obtained as for latitude LLL.

ll=Lapse rate between ground and height of fall of temperature indicator in degrees centigrade and tenths if the value does not exceed 9·9°C/Km; and in whole degrees centigrade only if it is 10°C/Km or more.

MM=Maximum temperature in degrees Fahrenheit during past 24 hours. When any temperature of 100° or over is reported, 1 is omitted and the other two figures are given.

mm=Minimum temperature in degrees Fahrenheit during past 24 hours. When any temperature less than 0°F is reported, 50 is added to the value, thus a temperature of −5°F will be reported as 55.

N=Total amount of sky covered with cloud of all forms—high, medium or low. (*See Code XXI.*)

$\mathbf{N}_K$=Total amount of cloud of class $\mathbf{C}_K$ (*See Code XXI.*)

$\mathbf{N}_L$=Total amount of cloud of class $\mathbf{C}_L$. (*See Code XXI.*)

P=Day of week. 1=Sunday, 2=Monday, 3=Tuesday, 4=Wednesday, 5=Thursday, 6=Friday, 7=Saturday. The day refers to G. M. T. and not to local time, *e.g.*, Sunday means the period from 0h. to 24 h. on Sunday at Greenwich.

Q=Octant of globe in which ship is situated. (*See Code XXII.*)

Q′=Position of ship in the Indian ocean to the south or north of equator. '4' and '9' will be reported for 'Q'' by ships in the Indian ocean to the south and at or to the north of equator respectively.

q=Remarks about nature of squalls since last observation. (*See Code XXIII.*)

RRR=Rainfall in inches and cents. (*See Code XXIV.*)

RR=Rainfall to the nearest tenth of an inch in the Karachi code. In the Indian broadcast code it will mean rainfall in whole millimeters. (*See Code XXV.*)

R=Rainfall since last observation (*See Code XXVI*).

r=Remarks about nature of the past precipitation, *i.e.*, nature of drizzle, rain or shower reported under W. (*See Code XXVII.*)

S=State of sea. (*See Code XXVIII.*)

ss=Indian Standard Time (G. M. T.+5 hr. 30 mints.).

TT=Dry bulb thermometer reading in degrees Fahrenheit corrected for index error. When any temperature of 100° F or over is reported, 1 is omitted and the other two figures are given. When any temperature less than 0°F. is reported, 50 is added to the value as in the case of '**m m**'. In the International ships' code, TT will be reported in whole degrees Fahrenheit or Centigrade.

T=Calibration temperature of Temperature Indicator (*See Code XXIX*).

$\mathbf{T}_1\,\mathbf{T}_1$=Wet bulb thermometer reading in degrees Fahrenheit corrected for index error. When any temperature less than 0° F is reported, 50 is added to the value as in the case of '**m m**'.

$T_S T_S$ =Dry bulb thermometer reading in degrees Fahrenheit corrected for index error and reduced to sea-level. When any temperature of 100°F. or over is reported, 1 is omitted and the other two figures are given.

Stations whose height is above 3200 feet, report under $T_S T_S$ the temperature reduced to nearest 3280 feet (1 Kilometer), 6560 feet (2 Kilometers) or 9840 feet (3 Kilometers) as the case may be, 50 being added to negative values.

t=Time of commencement of present weather phenomenon (*See Code XXX.*)

t_d =Difference between sea and air temperature. (*See Code XXXI.*)

UU=Relative or percentage humidity of the air, ' 00 ' being reported when the humidity is 100 per cent.

U=Relative or percentage humidity of the air (*See Code XXXII*).

V=Visibility or distance up to which objects can be seen in day light (or up to which lights can be seen at night). (*See Code XXXIII.*) Visibility from ships at sea. (*See Code XXXIII b.*)

V_S =Horizontal visibility towards the sea (from coast stations). (*See Code XXXIII.*)

vv=Velocity of upper wind in whole meters per second.

W=Past weather remarks (*See Code XXXIV*).

ww=The actual weather at the time of observation (*See Code XXXV*).

$\left.\begin{matrix} X \text{ or } X_1\ X_2\ X_3\ X_4 \\ Y \text{ or } Y_1\ Y_2\ Y_3\ Y_4\ -Y_9 \end{matrix}\right\}$ =Check figure—unit figure

X_5, Y_{10}, Z=Key check—unit figure.

3=Characteristic figure to distinguish first form of the International ships' code.

6=Characteristic figure to distinguish second form of the International ships' code.

*8=Characteristic figure to distinguish low cloud group.

*9=Characteristic figure to distinguish the medium and high cloud group.

Note.—Dash (—), one or more as the case may be, will be reported whenever any information is not available.

III.—SPECIFICATION OF THE CODES.

Code I.

Amount and characteristic of Barometric tendency expressed by a single figure (A).

Code figure.		Change in last 3 hours in inches.	millibars.
0	Barometer steady	Less than 0·02	$\frac{1}{2}$ or less
1	Rising slowly	0·03 to 0·05	1 to $1\frac{1}{2}$
2	Rising	0·06 to 0·11	2 to $3\frac{1}{2}$
3	Rising quickly	0·12 to 0·18	4 to 6
4	Rising very rapidly ..	More than 0·18	More than 6
5	Falling slowly	0·03 to 0·05	1 to $1\frac{1}{2}$
6	Falling	0·06 to 0·11	2 to $3\frac{1}{2}$
7	Falling quickly	0·12 to 0·18	4 to 6
8	Falling very rapidly ..	More than 0·18	More than 6

Code II.

Characteristic of Barometric Tendency during the period of three hours preceding the time of observation (**a**).

Code figure.		
0	Rising then falling.	Barometer now higher than or the same as 3 hours ago.
1	Rising then steady, or rising then rising more slowly.	
2	Unsteady.	
3	Steady or rising.	
4	Falling or steady, then rising; or rising then rising more quickly.	
5	Falling then rising.	Barometer now lower than 3 hours ago.
6	Falling then steady; or falling then falling more slowly.	
7	Unsteady.	
8	Falling.	
9	Steady or rising then falling; or falling then falling more quickly.	

Code III.

Amount of Barometric Tendency during the period of three hours preceding the time of observation (**bb**).

This will be reported in units of 1/5th of a millibar, *i.e.*, the actual tendency in millibars is to be multiplied by 5 and the integral numbers reported.

Thus, if the barometric tendency during the period of three hours preceding the time of observation be *0·8, 1·5, 2·2, 5·4 or 6·2* millibars, the figures to be reported under bb will be *04, 07, 11, 27 or 31.*

Code IV.

Form of predominating cloud (**C**).

Code figure.		
1	Cirrus	(C).
2	Cirro-Stratus	(CS).
3	Cirro-Cumulus	(CK).
4	Alto-Cumulus	(AK).
5	Alto-Stratus	(AS).
6	Strato-Cumulus	(SK).
7	Nimbus	(N).
8	Cumulus or Fracto-Cumulus	(K or FK).
9	Cumulo-Nimbus	(KN).
0	Stratus or Fracto-Stratus	(S or FS).

Code V.

Form of predominating high cloud (C_H).

Code figure.	
0	No Cirriform cloud.
1	Fine Cirrus not increasing : sparse.
2	Fine Cirrus not increasing : abundant but not a continuous layer.
3	Anvil Cirrus (usually dense).
4	Fine Cirrus increasing : usually in tufts.
5	Cirrus or Cirro-Stratus increasing : still below 45° altitude : often in polar bands.
6	Cirrus or Cirro-Stratus increasing and reaching above 45° altitude : often in polar bands.
7	Veil of Cirro-Stratus covering whole sky.
8	Cirro-Stratus not increasing and not covering whole sky.
9	Cirro-Cumulus predominating, and a little Cirrus.

Cirro-Cumulus may occur with any of the types 1 to 8.

Code VI.

Form of lowest cloud present (C_K)

Code figure.			
1	Fair weather Cumulus	(K)	Low.
2	Large Cumulus without anvil	(K)	Low.
3	Cumulo-Nimbus	(KN)	Low.
4	Strato-Cumulus	(SK)	Low.
5	Layer of Stratus	(S)	Low.
6	Nimbus	(N)	Low.
7	Alto-Stratus	(AS)	Medium
8	Alto-Cumulus	(AK)	Medium
9	Cirro-Cumulus	(CK)	High.
0	Cirrus or Cirro-Stratus	(C or CS)	High.

Code VII.

Form of predominating low cloud (C)

Code figure.	
0	No low cloud.
1	Fair weather Cumulus (K).
2	Large Cumulus without anvil (K).
3	Cumulo-Nimbus (KN).
4	Strato-Cumulus (SK).

Code figure.	
5	Layer of Stratus (S) or Strato-Cumulus (SK).
6	Nimbus (N).
† 7	Fair weather Cumulus (K) and Strato-Cumulus (SK).
† 8	Large Cumulus (K) or Cumulo-Nimbus (KN) and Strato-Cumulus (SK).
† 9	Large Cumulus (K) or Cumulo-Nimbus (KN) and Nimbus (N)

† *In the International ships' code the last three code figures will also be used in addition to the first seven code figures.*

CODE VIII

Form of predominating medium cloud (C_M)

Code figure.	
0	No medium clouds.
1	Typical Alto-Stratus (thin).
2	Typical Alto-Stratus (thick) (sun or moon invisible).
3	Single layer of Alto-Cumulus or high Strato-Cumulus.
4	Alto-Cumulus in isolated bands. Individually decreasing (often lenticular).
5	Alto-Cumulus in bands (increasing).
6	Alto-Cumulus formed from the spreading out of Cumulus.
7	Alto-Cumulus associated with Alto-Stratus or Alto-Stratus with parts resembling Alto-Cumulus.
8	Alto-Cumulus Castellatus (or Alto-Cumulus in ragged fragments).
9	Alto-Cumulus in several layers generally associated with fibrous veils and a chaotic appearance of the sky.

In the case of middle clouds Cirro-Cumulus of the old International Specification can appear either alone or in combination with Alto-Cumulus.

CODE IX.

Form of predominating high or medium cloud (c)

Code figure.			
0	No high or medium cloud.		
1	Cirrus . .	. (C)	High.
2	Cirro-Stratus	. (CS)	High.
3	Cirro-Cumulus	. (CK)	High.
4	Alto-Cumulus	. (AK)	Medium.
5	Alto-Stratus	. (AS)	Medium.

CODE X.

Form of medium cloud (c_m)

Code figure.		
4	Alto-Cumulus	(AK).
5	Alto-Stratus	(AS).

Code XI.

Direction of swell (**d**).

Code figure.	
0	No swell.
1	NE.
2	E.
3	SE.
4	S.
5	SW.
6	W.
7	NW.
8	N.
9	Confused swell.

Code XII.

Cloud direction ($\mathbf{d}_H$, $\mathbf{d}_K$, $\mathbf{d}_L$, $\mathbf{d}_c$, $\mathbf{d}_m$,).

Code figure.	
0	No cloud.
1	Cloud is coming from NE.
2	Cloud is coming from E.
3	Cloud is coming from SE.
4	Cloud is coming from S.
5	Cloud is coming from SW.
6	Cloud is coming from W.
7	Cloud is coming from NW.
8	Cloud is coming from N.
9	Cloud is apparently stationary, or the direction cannot be determined.

Code XIII.

State of Ground ($\mathbf{E}_1$).

Code figure.	
0	Ground dry.
1	Ground wet.
†7	Ground soft and wet (muddy).
†8	Slight or moderate flood (less than 6″ deep).
2	Severe flood (more than 6″ deep.)
3	Ground covered with thawing snow.
4	Ground frozen hard and dry.

Code figure.	
5	Ground covered with ice or glazed frost.
6	Ground covered by partial or thin layer of snow or hail (less than 6″ deep).
9	Ground covered by moderate or thick layer of hail or snow (more than 6″ deep.)

† *Specifications for Code figures 7 and 8 of the International Code for the state of ground have been altered and put between Code figures 1 and 2 in order to fit in with the proper sequence of the different states of ground.*

CODE XIV.

Wind force on the Beaufort Scale (F).

Code figure.	Beaufort No.	Description of Wind.	Limits of speed in miles per hour.	Specification of scale to be used when anemometer is out of order.
0	0	Calm	.. Less than 1	Calm; smoke rises vertically; leaves do not move.
1	1	Light air	.. 1—3	Smoke bends from the vertical and drifts slowly with wind; windvane not affected.
2	2	Light breeze	.. 4—7	Wind just felt on face; leaves rustle; ordinary vane moved by wind.
3	3	Gentle breeze	.. 8—11	Leaves and small branches in constant motion.
4	4	Moderate breeze	12—16	Raises dust and loose paper; moves branches.
5	5	Fresh breeze	.. 17—21	Crested wavelets form on lakes, trees in leaf begin to sway.
6	6	Strong breeze	.. 22—27	Telegraph wires whistle; umbrellas used with difficulty.
7	7	Moderate gale	.. 28—33	Whole trees in motion; inconvenience felt when walking against wind.
8	8	Fresh gale	.. 34—40	Breaks small branches; difficulty experienced in walking against wind.
9	9	Strong gale	.. 41—48	Slight structural damage occurs, especially to roofs.
9	10	Whole gale	.. 49—56	Trees uprooted, considerable structural damage occurs, for instance kutcha houses blown down.
9	11	Storm ..	.. 57—65	Widespread damage.
9	12	Hurricane	.. Above 65	....

Note.—Forces above 9 will be reported as 9 in the weather telegrams, with the actual force added in plain language, at the end of the telegram, *e.g.*, force 10 will be reported as "Storm ten," force 11 as "Storm eleven" and force 12 as "Storm twelve." Ships at sea, however, report "Gale ten", "Storm eleven", "Hurricane twelve".

CODE XV.

Speed of ship in knots (f).

Code figure.	Knots.	Code figure.	Knots.
0	.. 0	5 .	.. 13—15
1	.. 1—3	6 ..	.. 16—18
2	.. 4—6	7 ..	.. 19—21
3	.. 7—9	8 ..	.. 22—24
4	.. 10—12	9	More than 24

Code XVI.

Average wind speed (f_1, f').

Code figure.	
0	Anemometer out of order.
1	0 to 1 miles per hour.
2	2 to 4 miles per hour.
3	5 to 7 miles per hour.
4	8 to 10 miles per hour.
5	11 to 13 miles per hour.
6	14 to 16 miles per hour.
7	17 to 19 miles per hour.
8	20 to 22 miles per hour.
9	23 miles or above per hour.

Note.—If the average speed during the past 24 hours or since last observation is above 23 miles per hour, figure 9 will be reported and the actual speed will be given in plain language at the end; *e.g.*, if the average speed is 29 miles per hour 9 will be reported for f_1 or f' and at the end of the telegram "average speed twenty-nine" will be added.

Code XVII.

Height of fall of Temperature—Indicator (**H**).

Code figure.	
1	0 to 499 metres above surface.
2	500 to 999 metres above surface.
3	1,000 to 1,499 metres above surface.
4	1,500 to 1,999 metres above surface.
5	2,000 to 2,499 metres above surface.
6	2,500 to 2,999 metres above surface.
7	3,000 to 3,499 metres above surface.
8	3,500 to 3,999 metres above surface.

Code XVIII.

Height of base of low cloud (h_L).

Code figure	
0	0 to 49 metres above surface
1	50 to 99 metres above surface
2	100 to 199 metres above surface.
3	200 to 299 metres above surface.
4	300 to 599 metres above surface.
5	600 to 999 metres above surface.

Code figure.	
6	1,000 to 1,499 metres above surface.
7	1,500 to 1,999 metres above surface.
8	2,000 to 2,499 metres above surface.
9	No low cloud, or height of base of cloud not determinable, or base of cloud above 2,499 metres above surface.

Code XIX.

Initial and final height of upper winds. ($\mathbf{h_i}$ $\mathbf{h_i}$, $\mathbf{h_f}$ $\mathbf{h_f}$)

Heights usually reported in upper air reports will be *0·5, 1·0, 1·5, 2·0, 2·5 and 3·0 km.* above M. S. L. $\mathbf{h_i}$ $\mathbf{h_i}$ and $\mathbf{h_f}$ $\mathbf{h_f}$ will be given as *05, 10 ..... 30* as the case may be. Thus if the station is *0·8 km.* above M. S. L., the initial height ($\mathbf{h_i}$ $\mathbf{h_i}$) will be reported as *10*. For mountain stations, the final height reported may be *4·0* or *6·0 km. above M. S. L.*, in which case *40* or *60* will be reported for ($\mathbf{h_f}$ $\mathbf{h_f}$).

Code XX.

The state of swell (**K**).

Code figure.		
0	None.	
1	Short or average length	Low.
2	Long	Low.
3	Short	Moderate height
4	Average length	Moderate height
5	Long	Moderate height
6	Short	Heavy.
7	Average length	Heavy.
8	Long	Heavy.
9	Confused.	

Code XXI.

Cloud amount (**N**, $\mathbf{N_K}$, $\mathbf{N_L}$).

Code figure.	
0	No cloud.
1	Trace.
2	1 tenth.
3	One quarter clouded (2 or 3 tenths).
4	Half clouded (4, 5 or 6 tenths).
5	Three quarters clouded (7 or 8 tenths).
6	9 tenths.
7	Decidedly more than nine tenths, but with openings.
8	Completely overcast.
9	Sky obscured by fog, duststorm or other phenomenon.

Code XXII.

Octant of the globe (**Q**).

Code figure.		
0	0—90 W	Northern.
1	90—180 W	
2	180—90 E	
3	90—00 E	
5	0—90 W	Southern.
6	90—180 W	
7	180—90 E	
8	90—0 E	

Code XXIII.

Nature of squalls since last observation (**q**).

Code figure.	
0	No squalls.
1	Occasional light squalls.
2	Occasional vigorous squalls.
3	Frequent light squalls.
4	Frequent vigorous squalls.
5	Continuous light squalls not increasing in intensity.
6	Continuous light squalls increasing in intensity.
7	Continuous vigorous squalls decreasing in intensity.
8	Continuous vigorous squalls, no change in intensity.
9	Continuous vigorous squalls further increasing in intensity.

Code XXIV.

Rainfall (**RRR**).

Note —1. In the daily morning weather message, the rainfall recorded during the past 24 hours will be reported. In other weather messages, the amount of rainfall recorded since the last observation will be reported.

2. Whenever the amount of rainfall exceeds *9* inches and *99* cents, "*999*" will be reported for **RRR** and also at the end, in plain language, the actual rainfall measured, *e.g.*, if the rainfall recorded is *11* inches *15* cents, *999* will be reported for **RRR**, and at the end of the telegram "eleven inches fifteen cents," will be added

Code XXV.

Rainfall (**RR**).

This will represent the amount at 4 and 14 G. M. T. observations during preceding 14 and 10 hours respectively.

In the code for Persian observatories it will be rainfall to the nearest tenth of an inch.

In the Indian broadcast code it will be rainfall in whole millimeters with the following exceptions :—

Specification of exceptions.

Code figure.	
91	.. 0·1 mm.
92	.. 0·2 mm.
93	. 0·3 mm.
94	.. 0·4 mm.
95	. 0·5 mm.
96	.. 0·6 mm.
97	.. Some rain but not measurable.
98	.. More than 90 mm.
99	.. Measurement impossible or unreliable.

CODE XXVI.

Rainfall (**R**).

Code figure.	
0	.. 0·00.
1	.. 0·01—0·09″.
2	.. 0·10—0·17″.
3	.. 0·18—0·37″.
4	.. 0·38—0·67″.
5	.. 0·68—0·87″.
6	.. 0·88—1·24″.
7	.. 1·25—1·74″.
8	.. 1·75—2·50″.
9	.. 2·51″ or more.

CODE XXVII.

Nature of past precipitation (**r**).

Code figure.	
0	No precipitation since last observation.
1	Occasional light precipitation.
2	Occasional moderate precipitation.
3	Occasional heavy precipitation.
4	Occasional very heavy precipitation.
5	Light continuous precipitation.
6	Moderate continuous precipitation.
7	Heavy continuous precipitation.
8	Very heavy continuous precipitation.
9	Variable light and heavy precipitation since last observation.

Code XXVIII.

State of Sea (**S**).

Code figure.	
0	Calm.
1	Smooth.
2	Slight.
3	Moderate.
4	Rough.
5	Very Rough.
6	High.
7	Very High.
8	Precipitous
9	Confused.

Code XXIX.

Calibration temperature of Temperature-Indicator (**T**).

Code figure.	Temperature to which the indicator was set.
0	5 ° C
1	10 ° C
2	15 ° C
3	20 ° C
4	25 ° C
5	30 ° C
6	35 ° C
7	40 ° C

Code XXX.

Time of commencement of present weather phenomenon (**t**).

Code figure.	
0	No special phenomena.
1	0 to 1 hour before time of observation.
2	1 to 2 hours before time of observation
3	2 to 3 hours before time of observation.
4	3 to 4 hours before time of observation.
5	4 to 5 hours before time of observation.
6	5 to 6 hours before time of observation.
7	6 to 7 hours before time of observation.
8	8 to 10 hours before time of observation.
9	Above 10 hours.

Code XXXI.

Difference between sea and air temperature (t_d).

Code figure.		°C	°F	
0	More than ..	5·0	9	
1	.. .. ..	3·1—5·0	6—9	Air temperature same as or higher than sea temperature.
2	.. .. ..	1·6—3·0	3—6	
3	.. .. ..	0·6—1·5	1—3	
4	.. .. ..	0·0—0·5	0—1	
5	.. .. ..	0·1—0·5	0—1	Air Temperature lower than sea temperature.
6	.. .. ..	0·6—1·5	1—3	
7	.. .. ..	1·6—3·0	3—6	
8	.. .. ..	3.1—5·0	6—9	
9	More than ..	5·0	9	

Code XXXII.

Code figure.	*Humidity* (U).	Relative humidity. per cent.
0	.. ..	.. 0—9
1	.. ..	.. 10—19
2	.. ..	.. 20—29
3	.. ..	.. 30—39
4	.. ..	.. 40—49
5	.. ..	.. 50—59
6	.. ..	.. 60—69
7	.. ..	.. 70—79
8	.. ..	.. 80—89
9	.. ..	.. 90—100

Code XXXIII.

Horizontal visibility (V, V_s).

Code figure.	
0	Objects not visible at 55 yards. (Dense fog or dense duststorm.)
1	Objects not visible at 220 yards. (Thick fog or thick duststorm.)
2	Objects not visible at 550 yards. (Moderate fog or moderate duststorm or thick dust haze.)
3	Objects not visible at 1,100 yards. (Light fog or light duststorm or moderate dust haze.)
4	Objects not visible at $1\frac{1}{4}$ miles. (Mist or slight dust haze, very poor visibility.)
5	Objects not visible at $2\frac{1}{2}$ miles. (Poor visibility.)
6	Objects not visible at $6\frac{1}{4}$ miles. (Moderate visibility.)
7	Objects not visible at $12\frac{1}{2}$ miles. (Good visibility.)
8	Objects not visible at 31 miles. (Very good visibility.)
9	Objects visible at 31 miles or more. (Excellent visibility.)

CODE XXXIII (*b*).

Visibility from Ships at sea (**V**).

Code figure.	
0	Dense fog. Objects not visible at 50 yards.
1	Thick fog. Objects not visible at 1 cable.
2	Fog. Objects not visible at 2 cables.
3	Moderate fog. Objects not visible at $\frac{1}{2}$ mile (nautical).
4	Mist or haze, or very poor visibility. Objects not visible at 1 mile (nautical).
5	Poor visibility. Objects not visible at 2 miles (nautical).
6	Moderate visibility. Objects not visible at 5 miles (nautical).
7	Good visibility. Objects not visible at 10 miles (nautical).
8	Very good visibility. Objects not visible at 30 miles (nautical).
9	Excellent visibility. Objects visible at more than 30 miles (nautical).

CODE XXXIV.

Past weather remarks (**W**).

Code figure.	
0	Fair (clear or slightly clouded).
1	Variable sky.
2	Mainly overcast
3	Fog or thick dust haze (visibility less than 1,100 yards)
4	Drizzle.
5	Rain.
6	Snow or sleet.
7	Showers.
8	Sandstorm or duststorm.
9	Thunderstorm.

Notes.- 1. Past weather (**W**) for the daily morning telegram is that experienced during past 24 hours. For observations at any other time it is the weather experienced since the last observation.

2. Whenever "showers" and "thunderstorm" were accompanied by hail, the word "Hail" will be added at the end of the telegram.

3 If there was an occurrence of "squally weather" since the previous observation and before one hour of the time of observation, the word "Squally" will be added at the end of the telegram.

CODE XXXV.

Character of Weather at time of observation (**ww**).

Code figure.	
00—19	**Brief description of sky and special phenomena.**
00	Cloudless.
*01	Cloud decreasing.
*02	Cloud increasing.
03	Overcast.
04	Fog over sea (coast station). / Fog on lower ground (inland station).
05	Haze (but visibility greater than $1\frac{1}{4}$ miles)
06	Dust devils seen.
07	Distant lightning.
08	Mist (visibility between 1,100 yards and $1\frac{1}{4}$ miles).
*09	Unsettled weather: Sky with AK or AS, evolved by the thickening of high clouds and winds unsteady or variable.
10	Precipitation within sight.
11	Thunder, without precipitation at the station.
*12	Dust storm seen from the observatory but not at it; visibility at observatory greater than 1,100 yards.
13	Ugly, threatening sky.
14	Squally weather.
15	Heavy squalls .. .. } in last 3 hours.
16	Waterspouts seen .. .. .. } in last 3 hours.
*17	General bad weather: Sky covered with a thick veil of Alto-Stratus and Nimbus and showing no sign of improvement.
†18	Signs of tropical storm forming.
†19	Signs that tropical storm has formed.
20—29	**Precipitation in last hour but not at time of observation.**
*20	———
21	Drizzle } other than showers.
22	Rain } other than showers.
23	Snow } other than showers.
24	Sleet } other than showers.
25	Rain shower. } In last hour but not at time of observation.
26	Snow shower. } In last hour but not at time of observation.
27	Hail or rain and hail shower. } In last hour but not at time of observation.
28	Slight thunderstorm. } In last hour but not at time of observation.
29	Heavy thunderstorm. } In last hour but not at time of observation.

† This will be reported only by ships at sea.

Code figure.	
30—39	**Dust haze, Dust storm or drifting snow (visibility less than 1,100 yards).**
*30	Moderate or thick haze.
31	Dust or sand storm has decreased.
32	Dust or sand storm, no appreciable change.
33	Dust or sand storm has increased.
34	Line of dust storms
35	Storm of drifting snow.
36	Slight storm of drifting snow } generally low.
37	Heavy storm of drifting snow } generally low.
38	Slight storm of drifting snow } generally high.
39	Heavy storm of drifting snow } generally high.
40—49	**Fog (visibility less than 1,100 yards).**
*40	———
41	Moderate fog in last hour.
42	Thick fog in last hour.
43	Fog, sky discernible } has become thinner during last hour.
44	,, sky not discernible } has become thinner during last hour.
45	,, sky discernible } no appreciable change during last hour.
46	,, sky not discernible } no appreciable change during last hour.
47	,, sky discernible } has become thick during last hour.
48	,, sky not discernible } has become thick during last hour.
49	Fog in patches.
50—99	**Precipitation at time of observation.**
50—59	**Drizzle (precipitation consisting of numerous minute drops).**
*50	——
51	Intermittent } slight drizzle.
52	Continuous } slight drizzle.
53	Intermittent } moderate drizzle.
54	Continuous } moderate drizzle.
55	Intermittent } thick drizzle.
56	Continuous } thick drizzle.
57	Drizzle and fog.
58	Slight or moderate } drizzle and rain.
59	Thick } drizzle and rain.
60—69	**Rain.**
*60	Rain accompanied with squalls.
61	Intermittent } slight rain.
62	Continuous } slight rain.
63	Intermittent } moderate rain.
64	Continuous } moderate rain.

Code figure.		
65	Intermittent	heavy rain.
66	Continuous	
67	Rain and fog.	
68	Slight or moderate	rain and snow.
69	Heavy	
70—79	**Snow.**	
*70	——	
71	Intermittent	slight snow in flakes.
72	Continuous	
73	Intermittent	moderate snow in flakes
74	Continuous	
75	Intermittent	heavy snow in flakes.
76	Continuous	
77	Snow and fog.	
78	Granular snow.	
79	Ice crystals.	
80—89	**Shower.**	
*80	Shower accompanied with squalls.	
81	,, of slight or moderate	rain
82	,, ,, heavy	
83	,, ,, slight or moderate	snow
84	,, ,, heavy	
85	,, ,, slight or moderate	rain and snow.
86	,, ,, heavy	
87	,, ,, granular snow.	
88	,, ,, slight or moderate	hail, or rain and hail.
89	,, ,, heavy	
90—99	**Thunderstorm with precipitation at time of observation.**	
*90	——	
91	Rain at time	with thunderstorm during last hour, but not at time of observation.
92	Snow or sleet at time	
93	Thunderstorm, slight without hail or soft hail, but with rain (or snow).	At time of observation.
94	Thunderstorm, slight with soft hail.	
95	Thunderstorm, moderate, without hail, but with rain (or snow).	
96	Thunderstorm, moderate, with soft hail.	
97	Thunderstorm, heavy, without hail, but with rain (or snow).	
98	Thunderstorm, combined with duststorm.	
99	Thunderstorm, heavy, with hail.	

Notes.—1. In selecting the number for **ww** no account is taken of phenomena which occurred more than 1 hour before the time of observation (except in the cases of code figures 15 and 16), but only of phenomena which occurred during the interval of 1 hour preceding the stated hour of observation and those which occur actually at the time of observation.

2. The word intermittent will be used whenever the fog or precipitation had not been continuous during the last hour but has occurred at intervals.

3. Code figures 20-29 will never be used when there is precipitation actually occurring at the time of observation.

4. Code figures 60 and 80 will be preferred to others in their respective decades (*viz.*, 60-69 and 80-89), whenever rain and showers are accompanied with squalls. *Otherwise the largest number of the code which applies to the weather at the station will be used.*

5. Code figures 80-89 will only be used when the precipitation is of the shower type, and when precipitation is actually occurring at the time of observation The clouds which give showers are isolated passing clouds, and the showers are, therefore, always of short duration Between the showers there is a definite clearance unless stratiform clouds are filling the spaces between the shower clouds, in which case a drizzle or light rain may intervene between two showers.

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* International specifications for these code figures are :

01	Partly cludy.
02	Cloudy.
09	—
12	—
17	—
20	Precipitation (rain, drizzle, hail, snow or sleet) in last hour but not at time.
30	Dust or sandstorm.
40	Fog.
50	Drizzle.
60	Rain.
70	Snow or sleet.
80	Shower(*s*).
90	Thunderstrom.

The International Specifications of **ww** will be used in the Indian Broadcast Code and by the ships reporting in the International Ship's Code.

APPENDIX.

INTERNATIONAL INDEX NUMBERS OF STATIONS IN INDIA AND NEIGHBOURING COUNTRIES.

Index No.	Station.	Latitude. (N)	Longitude. (E)	Altitude. (Feet)
	Arabia and Persia (300—329).			
		° ′	° ′	
300	..	..	..	..
301	..	..	..	..
302	..	..	..	..
303	Aden	12 46	45 03	98
304	..	..	..	..
305	..	..	..	..
306	Baitul Falaj (Muscat)	23 37	58 35	72
307	Sharjah	25 21	55 24	.. 12
308	Bahrein	26 12	50 30	8
309	..	..	..	..
310.	..	..	..	..
311	Teheran	35 41	51 25	4,002
312	Kermanshah	34 11	47 11	5,200
313	Ispahan	32 40	51 44	5,817
314	Kerman	30 21	57 10	..
315	Bushire	29 00	50 50	14
316	Lingeh	26 36	54 53	..
317	Henjam or Bundar Abbas	26 40	55 55	100
318	Jask	25 45	57 45	13
319	Charbar	25 17	60 37	25
320	Duzdap	29 30	60 55	4,533
321	..	..	..	..
322	Birjand	..	..	..
323	Meshed	36 17	59 38	3,104
324	..	..	..	..
325	..	..	..	..
326	..	..	..	..
237	..	..	..	..
328	..	..	..	..
329	Seistan	31 00	62 00	2,000
	Afghanistan (330—339).			
330	Kabul	34 30	69 18	5,895
331	..	..	..	..
332	Kandahar	..	..	..
333	..	..	..	..
334	Herat	..	..	..
335	..	..	..	..
336	..	..	..	..
337	..	..	..	..
338	..	..	..	..
339	..	..	..	..

Index No.	Station.	Latitude. (N)	Longitude. (E)	Altitude. (Feet)
BALUCHISTAN, INDIA, BURMA, ANDAMANS AND NICOBARS. (340—564).				
	Baluchistan (340—351).			
340	Panjgur	° ′ 27 00	° ′ 64 00	3,177
341	Pasni	25 16	63 33	10
342	Ormora	25 15	64 39	15
343	Gwador	25 07	62 19	22
344	Mirjawa	28 57	61 29	2,762
345	Dalbandin	28 51	64 26	2,772
346	Kalat	28 58	66 28	6,623
347	Harnai	30 08	68 00	..
348	Fort Sandeman	31 21	69 29	4,614
349	Chaman	30 55	66 28	4,311
350	Quetta	30 13	67 00	5,502
351	Sibi	..	..	..
	North-West Frontier Province (352—358).			
352	Cherat	33 50	72 01	4,256
353	Parachinar	33 54	70 07	6,005
354	Drosh	35 35	71 50	4,500
355	Peshawar	34 01	71 34	1,164
356	Dera Ismail Khan	31 51	70 56	590
357	Miranshah	..	..	..
	Kashmir (358—363).			
358	Gulmarg	34 06	74 23	8,569
359	Srinagar	34 06	74 51	5,204
360	Leh	34 10	77 40	11,503
361	Dras	34 20	75 50	10,059
362	Skardu	35 12	75 35	7,505
363	Gilgit	35 55	74 22	4,890
	Punjab (364—379).			
364	Lahore	31 34	74 21	702
365	Dalhousie	32 35	76 00	..
366	Simla	31 06	77 13	7,225
367	Ludhiana	30 55	75 54	812
368	Ambala	30 21	76 52	892
369	Delhi	28 39	77 17	695
370	Hissar	29 10	75 46	725
371	Sialkot	32 31	74 36	830
372	Murree	33 55	73 27	6,181
373	Rawalpindi	33 37	73 06	1,674
374	Khushab	32 18	72 24	612
375	Lyallpur	31 26	73 06	605
376	Montgomery	30 58	73 21	558
377	Multan	30 12	71 31	426
378	Bahawalpur	29 24	71 41	330
379	Khanpur	28 39	70 44	..
	Sind (380—385).			
380	Karachi (Manora)	24 51	67 04	13
381	Karachi (Drigh Road)	24 51	67 04	77
382	Hyderabad	25 23	68 24	96
383	.. ..	..	..	..
384	Naushahro	26 51	68 08	135
385	Jacobabad	28 17	68 29	186

Index No.	Station.	Latitude. (N)	Longitude. (E)	Altitude. (Feet)
	Rajputana (386—395.)			
		° ′	° ′	
386	Bikaner	28 01	73 22	762
387	Jodhpur	26 17	73 04	780
388	.. ..	..	..	..
389	Barmer	25 45	71 24	631
390	Ajmer	26 27	74 44	1,611
391	Jaipur	26 55	75 52	1,431
392	Kotah	25 10	75 52	834
393	Udaipur	24 35	73 43	1,925
394	Mount Abu	24 36	72 43	3,945
395	.. ..	..	..	..
	The United Provinces. (396—411).			
396	.. ..	..	..	..
397	Dehra Dun	30 19	78 04	2,233
398	Mukteswar	29 29	79 40	7,592
399	Roorkee	29 52	77 53	899
400	Agra	27 10	78 05	554
401	Meerut	29 01	77 45	733
402	Bareilly	28 22	79 27	568
403	Mainpuri	27 14	79 03	516
404	Jhansi	25 27	78 37	824
405	Bahraich	27 34	81 38	407
406	Lucknow	26 55	80 59	368
407	Cawnpore	26 28	80 24	416
408	Gorakhpur	26 45	83 24	257
409	Benares	25 19	83 03	250
410	Allahabad	25 28	81 54	309
411	.. ..	..	..	..
	Central India (412—418).			
412	Sutna	24 34	80 55	1,041
413	Nowgong	25 03	79 30	754
414	Guna	..	..	..
415	Neemuch	24 27	74 52	1,626
416	Indore	22 44	75 50	1,821
417	.. ..	..	..	..
418	.. ..	..	..	..
	The Central Provinces. (419—435).			
419	Khandwa	21 50	76 23	1,044
420	Nagpur	21 09	79 09	1,017
421	Seoni	22 06	79 35	2,032
422	Pachmarhi	22 30	78 27	3,528
423	Hoshangabad	22 46	77 45	1,006
424	Saugor	16 37	76 51	1,808
425	Jubbulpur	23 10	79 50	1,327
426	Akola	20 42	77 02	928
427	Amraoti	20 56	77 48	1,213
428	.. ..	..	..	..
429	Pendra	22 47	82 00	2,040

Index No.	Station.	Latitude. (N)	Longitude. (E)	Altitude. (Feet)
		° ′	° ′	
	The Central Provinces (419—435)—*contd.*			
430	Raipur	21 15	81 41	970
431	Kanker	..	..	1,300
432	Chanda	19 56	79 21	634
433	Jagdalpur	14 31	76 24	1,813
434	.. ..	..	..	..
435	.. ..	..	..	..
	Bihar and Orissa (436—451).			
436	.. ..	..	..	..
437	Chandbali	20 47	86 45	30
438	Balasore	21 30	86 58	65
439	Sambalpur	21 28	84 01	486
440	Angul	20 47	85 01	455
441	Sointilla	..	..	..
442	Cuttack	20 48	85 56	87
443	Chaibasa	22 33	85 51	733
444	Ranchi	23 23	85 23	2,151
445	Hazaribagh	23 59	85 25	2,007
446	Daltonganj	24 02	84 06	725
447	Naya Dumka	24 16	87 17	489
448	Gaya	24 49	85 03	372
449	Purnea	25 46	87 31	124
450	Patna	25 37	85 10	173
451	Darbhanga	25 10	85 57	165
	Bengal (452—465).			
452	Darjiling	27 03	88 18	7,432
453	Jalpaiguri	26 32	88 46	274
454	Dinajpur	25 37	88 40	355
455	Bogra	24 51	89 26	66
456	Mymensingh	24 46	90 27	63
457	Berhampur	24 06	88 23	65
458	Burdwan	23 16	87 54	99
459	Jessore	23 10	89 10	33
460	Calcutta	22 32	88 24	21
461	Saugor Island	21 40	88 10	10
462	Barisal	20 42	90 24	12
463	Cox's Bazar	21 26	92 01	36
464	Chittagong	22 21	91 50	87
465	Narayanganj	23 37	90 32	26
	Assam (466—473).			
466	Silchar	24 50	92 51	104
467	Cherrapunji	25 16	91 46	4,309
468	Shillong	25 34	91 56	4,920
469	Dhubri	26 02	90 02	115
470	Gauhati	26 11	91 48	196
471	Tezpur	26 37	92 53	258
472	Sibsagar	26 59	94 41	333
473	Dibrugarh	27 28	94 59	348

Index No.	Station.	Latitude. (N)	Longitude. (E)	Altitude. (Feet)
		° ′	° ′	
	Burma and Andamans (474—499).			
474	Myitkyina	25 31	97 10	463
475	Bhamo	24 16	97 17	414
476	Lashio	22 55	97 50	2,820
477	Maymyo	22 01	96 30	3,546
478	Monywa	22 07	95 10	280
479	Mandalay	21 59	96 08	250
480	Yamethin	20 27	96 09	644
481	Minbu	20 12	94 58	168
482	Haka	22..39	93..37	6..100
483	Akyab	20 07	92 57	20
484	Kyaukpyu	19 22	93 30	18
485	Toungoo	18 55	96 31	158
486	Sandoway	18..28	94..22	..209
487	Gwa	17 35	94 37	10
488	Diamond Island	15 52	94 19	41
489	Bassein	16 44	94 50	27
490	Rangoon	16 47	96 13	18
491	Amherst	16 04	97 35	..
492	Tavoy	14 07	98 18	19
493	Mergui	12 27	98 35	66
494	Victoria Point	10 01	98 33	113
495	Kamorta	7..12	94..02	6..322
496	Tharawaddy	17..40	95..48	..49
497	Tharton	16..55	97..25	..76
498	Port Blair	11 41	92 45	59
499	Car Nicobar	..	..	..
	Bombay (500—523).			
500	Poona	18 31	73 55	1,846
501	Bhuj	23 15	69 49	343
502	Dwarka	22 14	69 05	37
503	Rajkot	22 18	70 56	429
504	Veraval	20 53	70 26	18
505	Bhavnagar	21 45	72 12	55
506	Deesa	24 14	72 13	466
507	Ahmedabad	23 02	72 38	163
508	Dohad	..	..	..
509	Tankhala	..	..	..
510	Surat	21 12	72 52	39
511	Malegaon	20 32	74 37	1,430
512	Ahmadnagar	19 05	74 48	2,154
513	.. ..	..	..	..
514	Sholapur	17 40	75 57	1,570
515	Miraj	..	..	..
516	Bijapur	16 50	75 04	1,948
517	Belgaum	15 52	74 34	2,562
518	Gadag	..	..	..
519	.. ..	..	..	..
520	Bombay	18 55	72 54	37
521	Ratnagiri	17 08	73 19	207
522	Marmagao	15 25	72 50	58
523	Karwar	14 48	74 11	44

Index No.	Station.	Latitude. (N)	Longitude. (E)	Altitude. (Feet)
		° ′	° ′	
	Mysore (524—527).			
524	Chitaldrug	14 14	72 26	2,405
525	Bangalore	12 58	77 37	3,021
526	Mysore	12 18	76 42	2,518
527	Mercara	12 26	75 47	3,781
	Madras (528—553).			
528	Mangalore	12 52	74 53	79
529	Calicut	11 15	75 49	27
530	Cochin	9 58	76 17	9
531	Trivandrum	8 29	76 59	198
532	Palamkottah	8 44	77 44	168
533	Pamban	9 17	79 15	37
534	Madura	9 55	78 10	463
535	Negapatam	10 46	79 53	31
536	Cuddalore	11 43	79 49	42
537	Trichinopoly	10 50	78 46	255
538	Salem	11 39	78 12	913
539	Vellore	12 55	79 10	702
540	Madras	13 04	80 15	22
541	Coonoor	..	..	..
542	Coimbatore	11 00	77 00	1,341
543	Kodaikanal	10 13	77 32	7,688
544	Cuddapah	14 28	78 52	428
545	Bellary	15 09	76 57	1,475
546	Kurnool	15 50	70 05	923
547	Macherla	..	..	..
548	Nellore	14 27	80 01	66
549	Masulipatam	16 09	81 12	10
550	Cocanada	16 57	82 15	26
551	Vizagapatam	17 44	83 23	126
552	Calingapatam	18 20	84 09	19
553	Gopalpur	19 16	84 57	56
	Hyderabad (554—564).			
554	Aurangabad	19 54	75 22	1,905
555	Parbhani	19 15	76 49	..
556	Nizamabad	18 40	78 09	1,248
557	Ramgudam	..	..	..
558	Gulbarga	17 19	76 54	1,503
559	Raichur	16 12	77 25	1,311
560	Hyderabad	17 20	78 30	1,719
561	Hanamkonda	18 02	79 35	877
562	Kothagudem	..	..	..
563	.. ..	..	..	..
564	.. ..	..	..	..

Index No.	Station.	Latitude. (N)	Longitude. (E)	Altitude. (Feet)
	Socotra, Seychelles, Chagos Leccadives and Maldives (565—570).			
		° ′	° ′	
565	Chagos	..	..	..
566	Seychelles	4 37(S)	55 27	..
567	Socotra	..	..	..
568	Amini Devi	11 06	72 45	13
569	Minicoy	8 17	72 49	7
570	Maldive Island	..	..	..
	Ceylon (571—579).			
571	Colombo	6 56	79 56	24
572	Galle	..	..	..
573	Jaffha	..	..	..
574	Trincomalee	8 34	81 08	99
575	.. ..	..	..	..
576	Hambantota	6 07	81 07	61
577	.. ..	..	..	..
578	Diyatalawa..	..	..	..
579	Nuwara Eliya	..	..	..
	Siam (580—593).			
580	Bangkok (Rangsit)	..	..	..
581	Patani	..	..	..
582	Chiong Mai	..	..	..
583	Prachub Kirikan	..	..	..
584	.. ..	..	..	..
585	.. ..	..	..	..
586	.. ..	..	..	..
587	.. ..	..	..	..
588	.. ..	..	..	..
589	.. ..	..	..	..
590	.. ..	..	..	..
591	.. ..	..	..	..
592	.. ..	..	..	..
593	.. ..	..	..	..
	Straits Settlements (594—599).			
594	Kuala Lampur	..	..	..
595	Singapore	..	..	..
596	Penang	..	..	..
597	.. ..	..	..	..
598	.. ..	..	..	..
599	.. ..	..	..	..

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